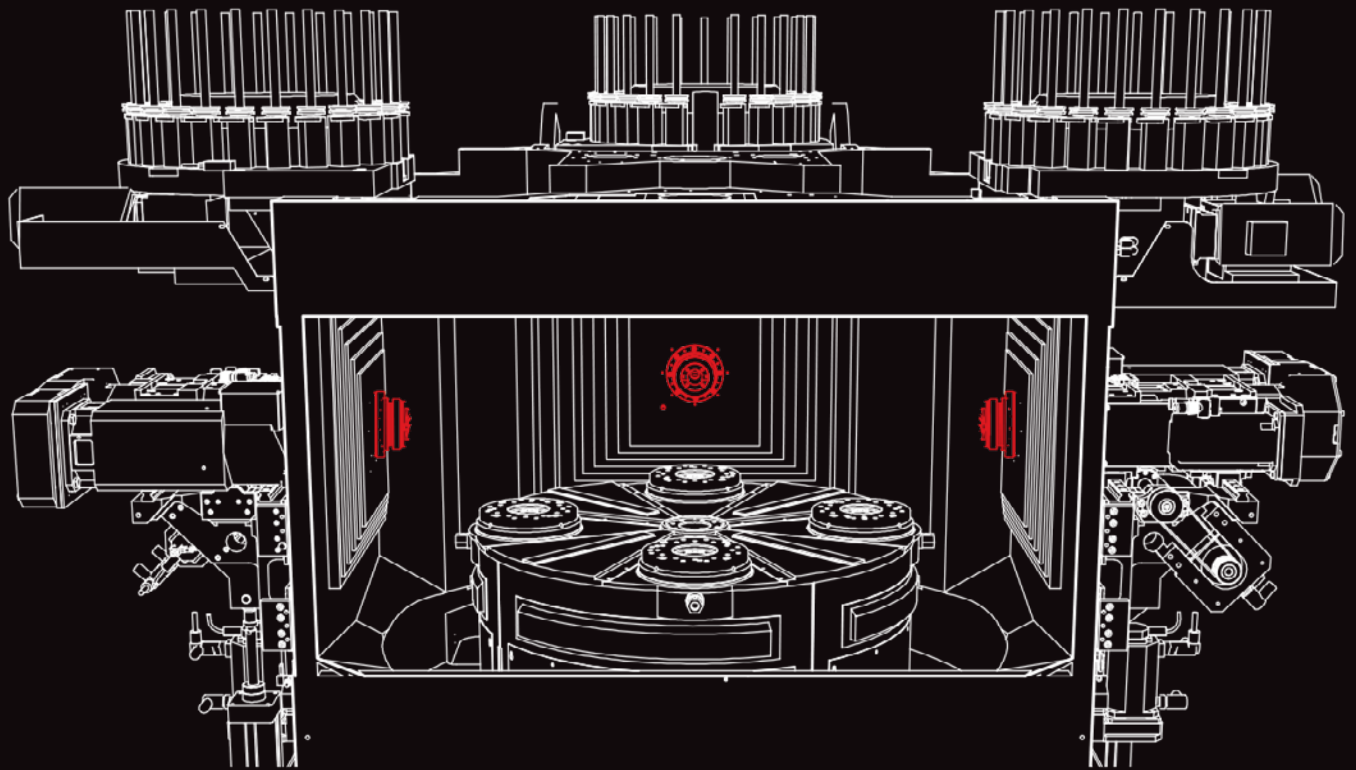
PORTACENTER

1 PROCESS, 3 TIMES FASTER

2023

3-SPINDLE MACHINING CENTER



1 PROCESS, 3 TIMES FASTER

> 4 station pallet table (3 machining stations, 1 load/unload station)
> 3 horizontal machining centers, independently programmed and controlled



3 MACHINING CENTERS

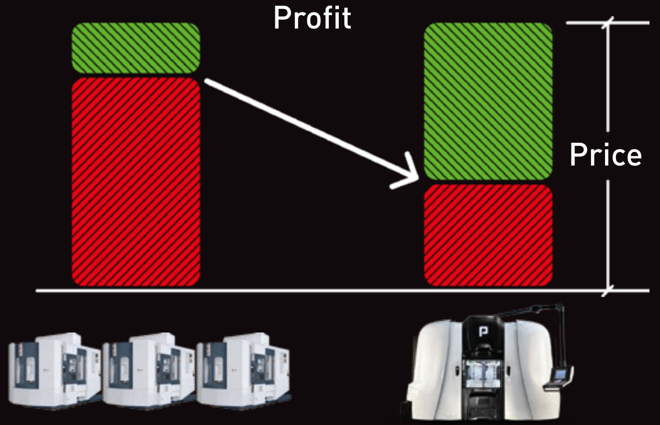


ONE 3-SPINDLE MACHINING CENTER

LOSE ORDERS

WIN ORDERS

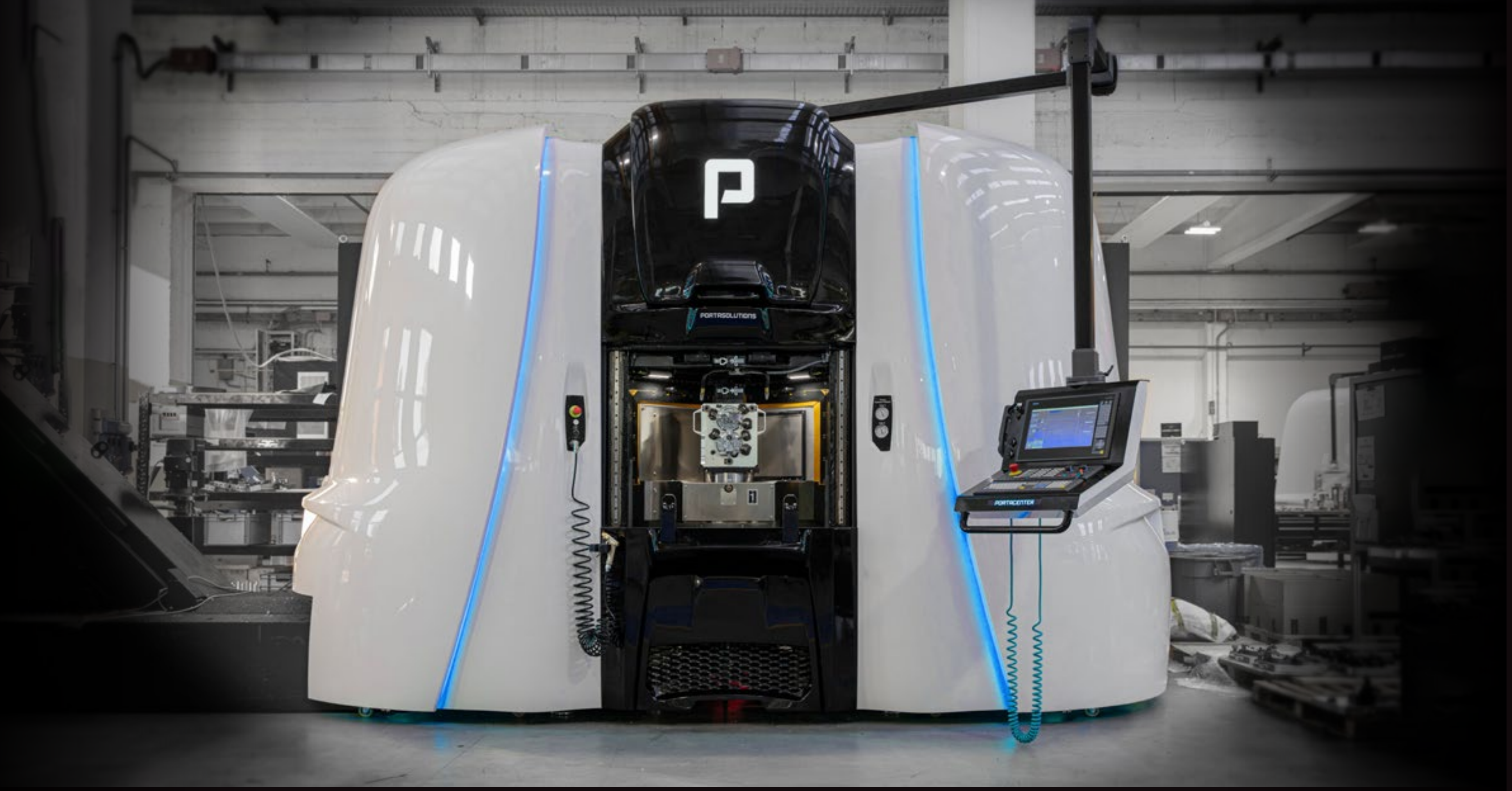
STOP LOSING ORDERS, CUT THE COST PER PART!



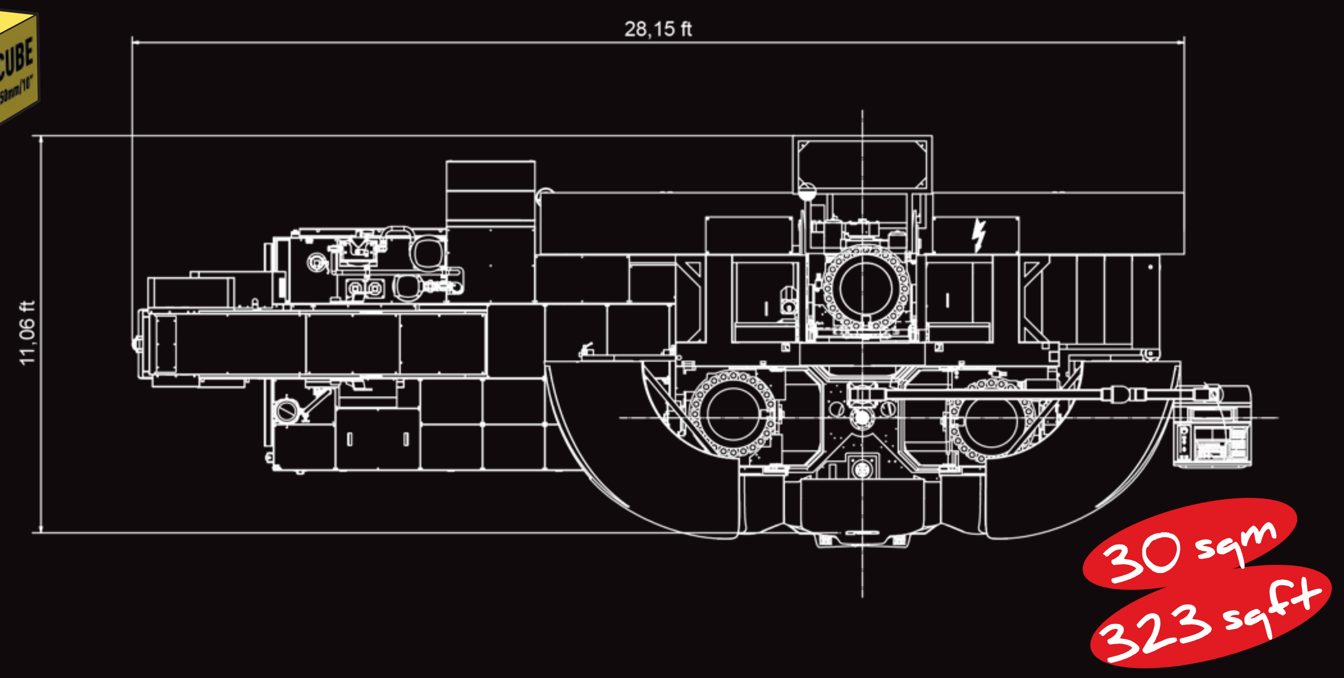
3 MACHINING CENTERS

ONE 3-SPINDLE MACHINING CENTER

- CUT 50% OF YOUR ENERGY CONSUMPTION
- DRASTIC REDUCTION OF LABOR
- FIXTURE COST SAVINGS AND PART CHANGEOVER IN 15 MINUTES
- DECREASE TO JUST 1/3 OF THE OCCUPIED FLOORSPACE
- ZERO RISK TEST DRIVE
- “TURNKEY” SERVICE







PORTACENTER 250 - CUBE 250mm / 10”

TOOL CHANGE

TOOL CHANGE	Metric	Imperial
tools	from 36 to 120	from 36 to 120
max tool weight	8 kg	17,63 lbs
max tool length	250 mm	9,84 in
max tool diameter	80 mm	3,15 in
max tool diameter with free position	120 mm	4,72 in
tool change	2,2 sec	2,2 sec
tool holder	ISO40 / HSK63	ISO40 / HSK63

CONTROL

human machine interface	touch-screen with full keyboard
teleservice	included
programming language	ISO code
CNC	Fanuc / Siemens

The information which are present in the catalogue are approximate and are not binding. Porta Solutions Spa reserves the right of modifying them at any time without prior notice.

AXES X,Y and Z

AXES X,Y and Z	Metric	Imperial
axes stroke	250/310/200 mm	9,84/12,2/7,88 in
speed	30/30/30 m/min	98,4/98,4/98,4 ft/min
acceleration	6,5/5,5/6,5 m/s²	21,3/18,1/21,3 ft/s²
4th axis	continuous	
positioning system	encoder / digital scale	

TOOL HOLDER SPINDLES

tool holder	ISO40 / HSK63
spindle speed	6000 / 13000 rpm
max power	up to 25 kw
max torque	150 Nm

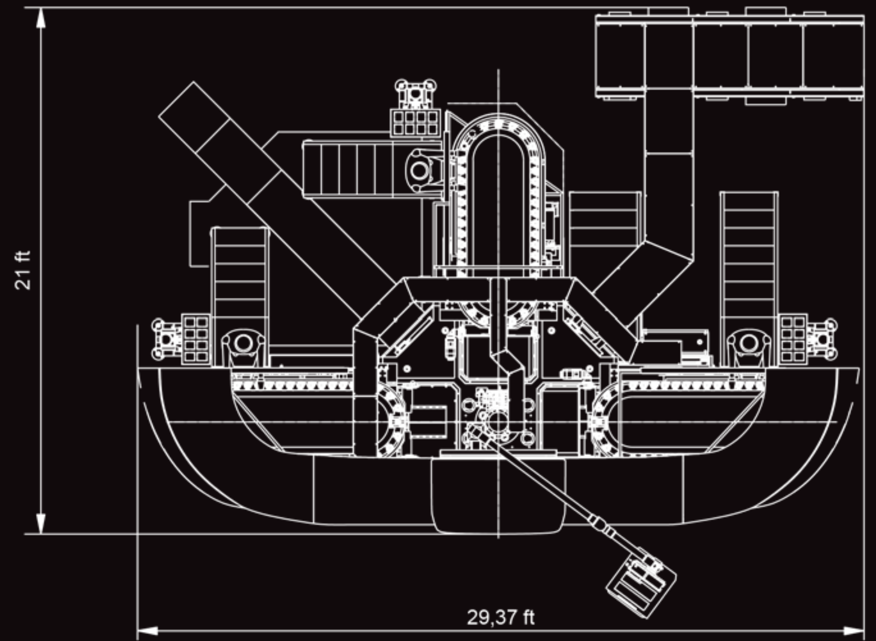
SECTORS

Automotive	Power
Fluid Handling	Military
Petrochemical	Transport
Oil&Gas	Medical









80 sqm
861 sqft

PORTACENTER 500 - CUBE 500mm / 20"

TOOL CHANGE	Metric	Imperial
tools	from 36 to 120	from 36 to 120
max tool weight	20 kg	44,1 lbs
max tool length	400 mm	15,75 in
max tool diameter	125 mm	4,92 in
max tool diameter with free position	200 mm	7,87 in
tool change	3 sec	3 sec
tool holder	ISO50 / HSK100	ISO50 / HSK100

CONTROL	
human machine interface	touch-screen with full keyboard
teleservice	included
programming language	ISO code
CNC	Fanuc / Siemens

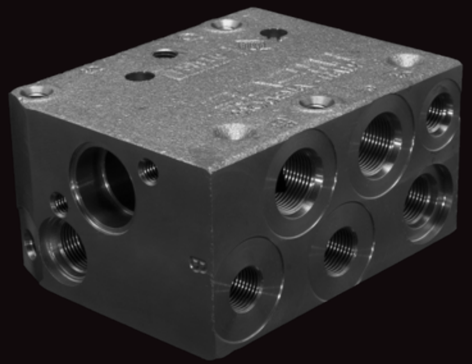
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AXES X,Y and Z	Metric	Imperial
axes stroke	500/500/500 mm	19,7/19,7/19,7 in
speed	30/30/30 m/min	98,4/98,4/98,4 ft/min
acceleration	4,5/3,5/4,5 m/s²	14,8/11,5/14,8 ft/s²
4th axis	continuous or 1° increment	
positioning system	encoder / digital scale	

TOOL HOLDER SPINDLES	
tool holder	ISO50 / HSK100
spindle speed	4000 / 10000 rpm
max power	up to 99 kw (33kw x 3)
max torque	300 Nm

SECTORS	
Automotive	Power
Fluid Handling	Military
Petrochemical	Transport
Oil&Gas	Medical

PARTS PRODUCED WITH PORTACENTER



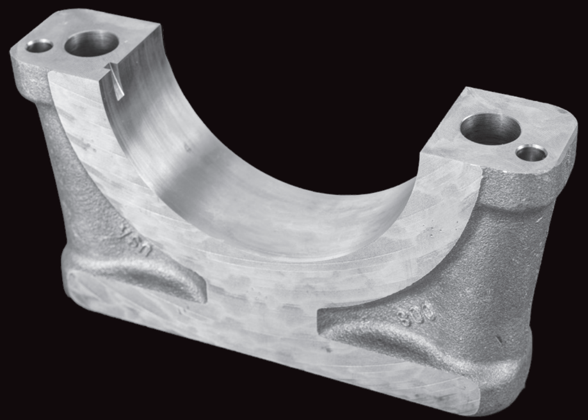














ONLY TURNKEY PROJECTS

FEASIBILITY STUDY
Feasibility study with 100% Porta Solutions responsibility

CYCLE TIME
Mathematical calculation to set hourly production

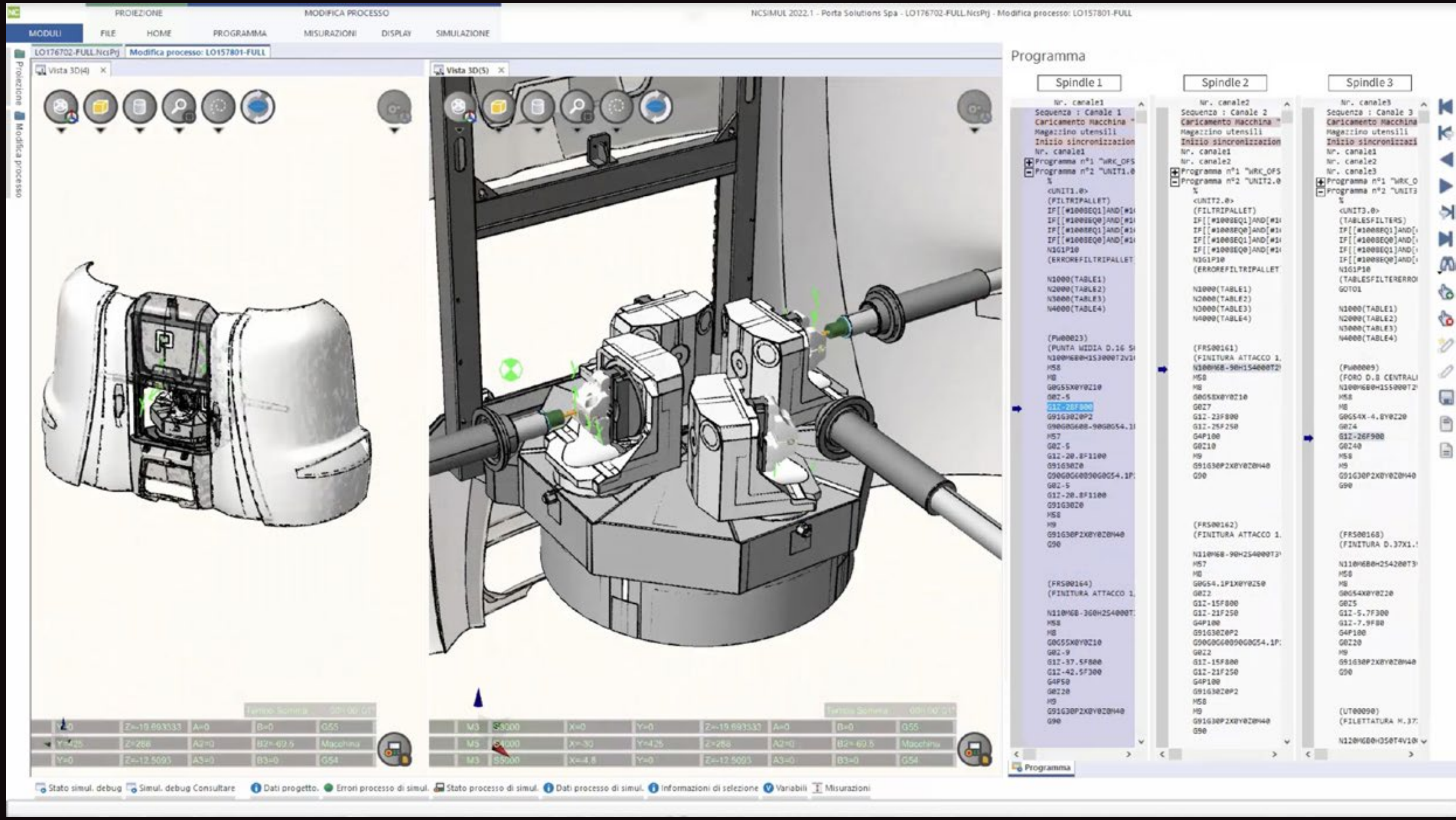
DESIGN OF FIXTURES
Project development with our Technical Department

ADVANCED TOOLS
Continuous co-design with reputable tool makers

CPK/CMK CERTIFICATION
Detailed report in Zeiss control room

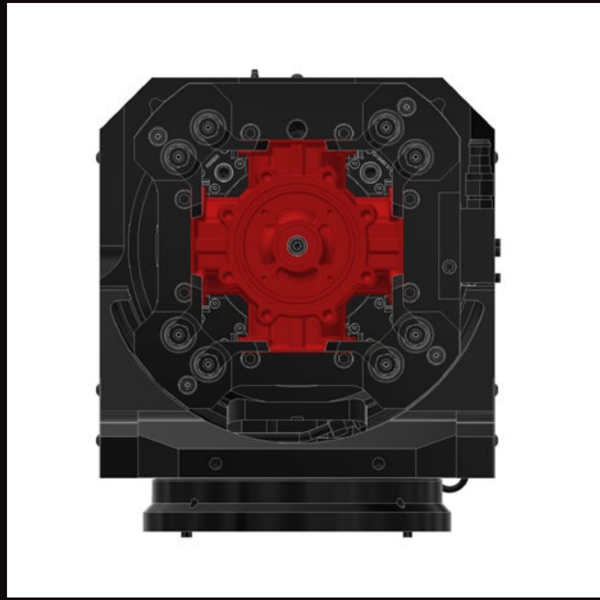
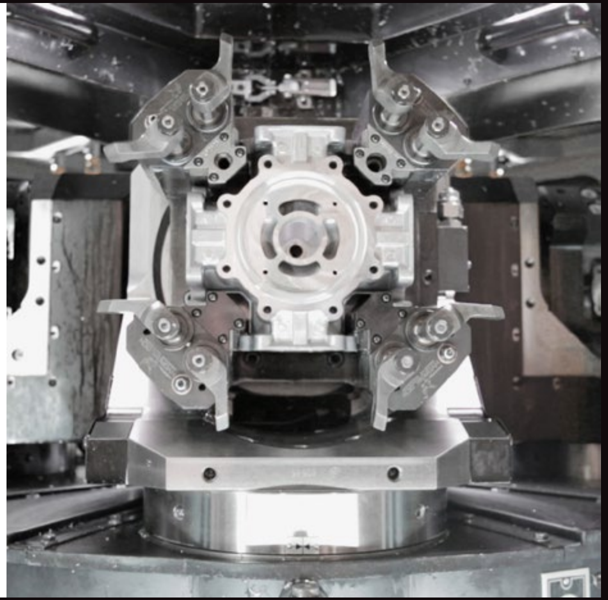
PRODUCTION START-UP
Production start-up and personnel training

3D-SIMULATOR OF THE CYCLE

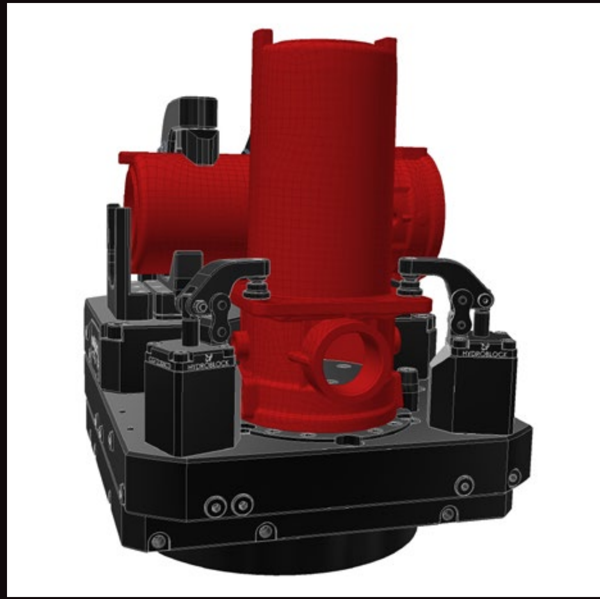
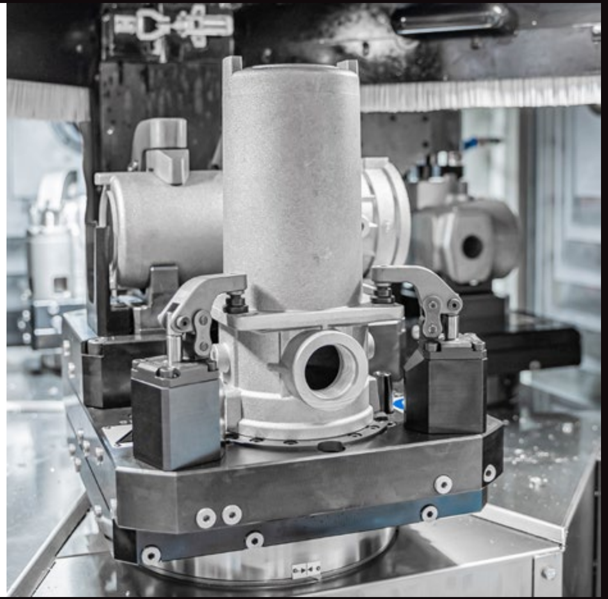


DESIGN OF FIXTURES

Sector: **OIL** Material: **ALUMINUM**

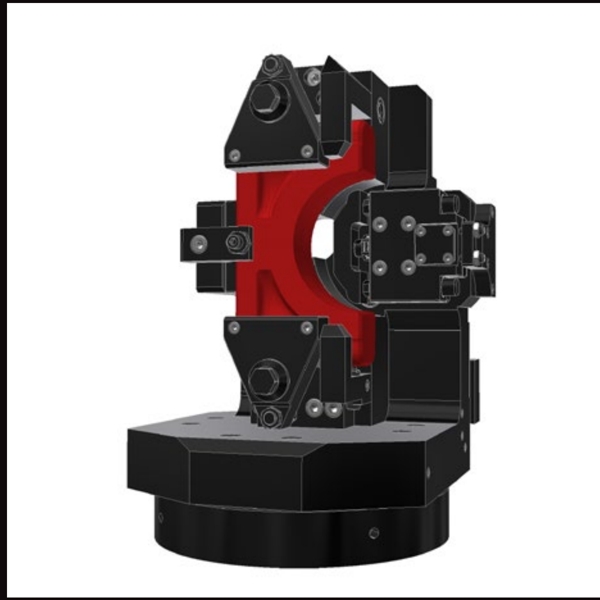
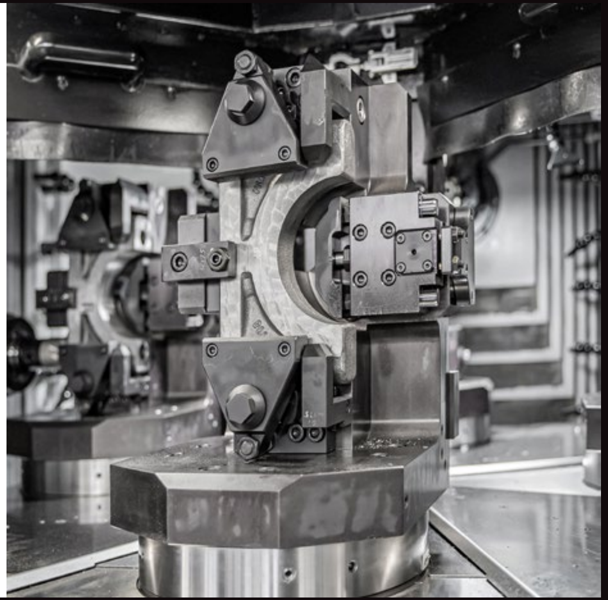



Sector: **OLEODYNAMIC** Material: **ALUMINUM**

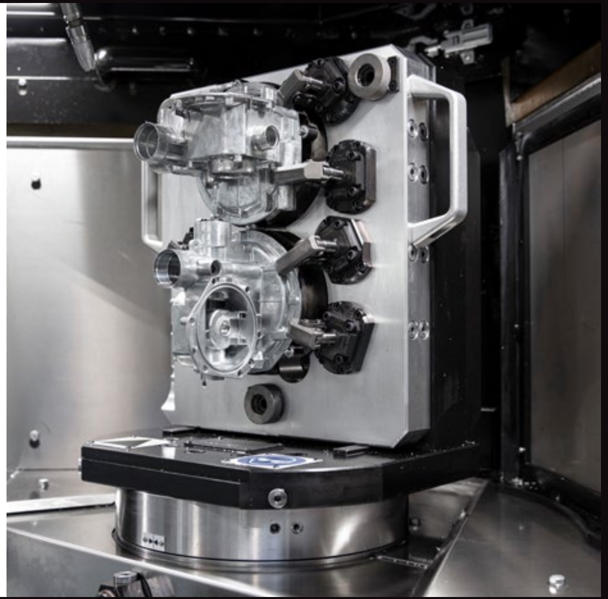



Project development with our Technical Department

Sector: **AUTOMOTIVE** Material: **STEEL**

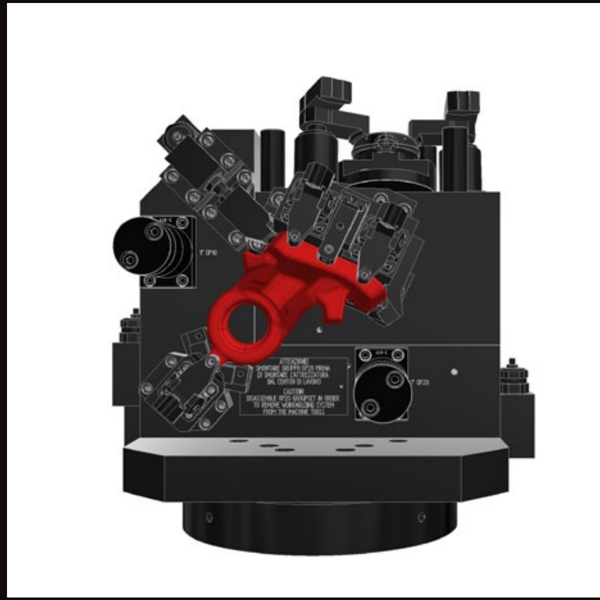



Sector: **ENERGY** Material: **STEEL**

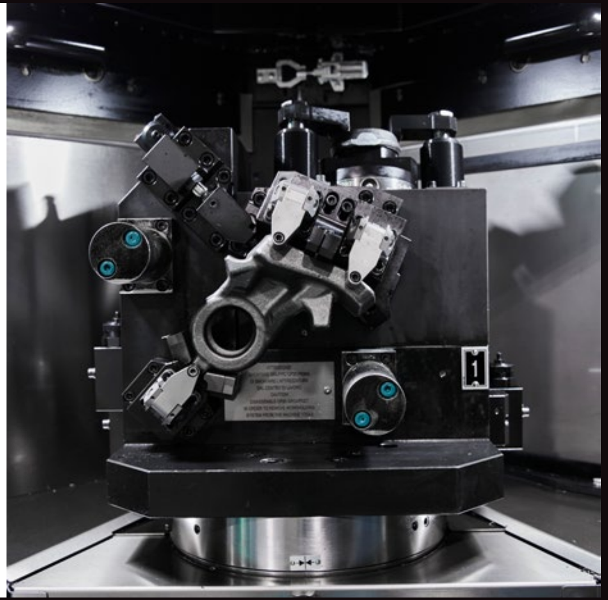



DESIGN OF FIXTURES

Sector: **AUTOMOTIVE**



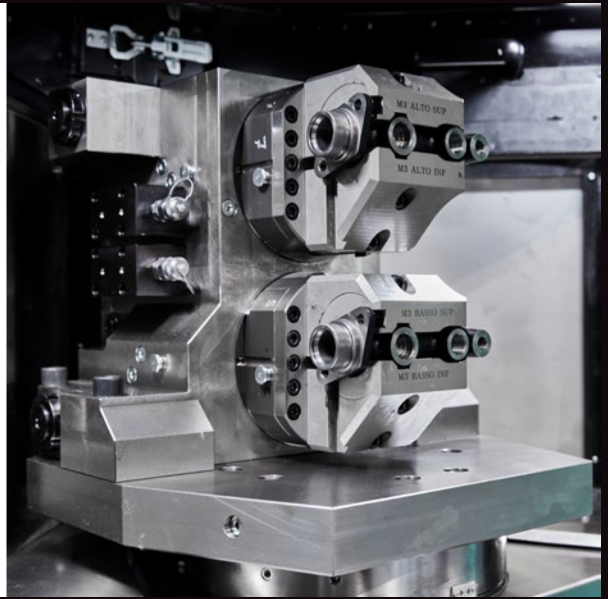
Material: **STEEL**



Sector: **AUTOMOTIVE**

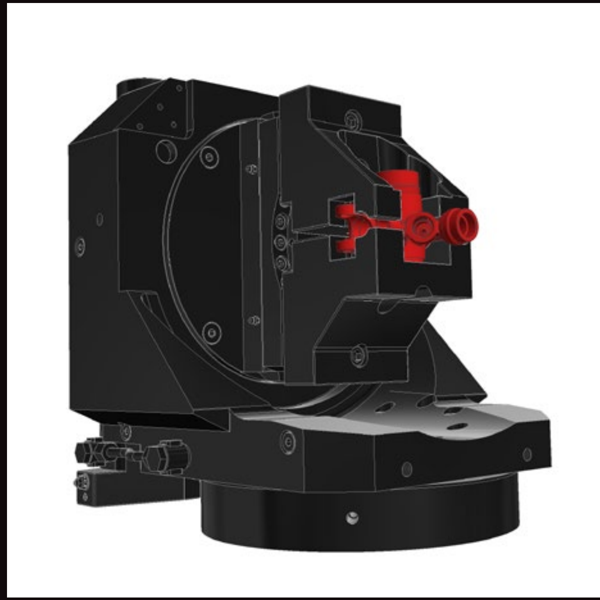


Material: **CAST IRON**

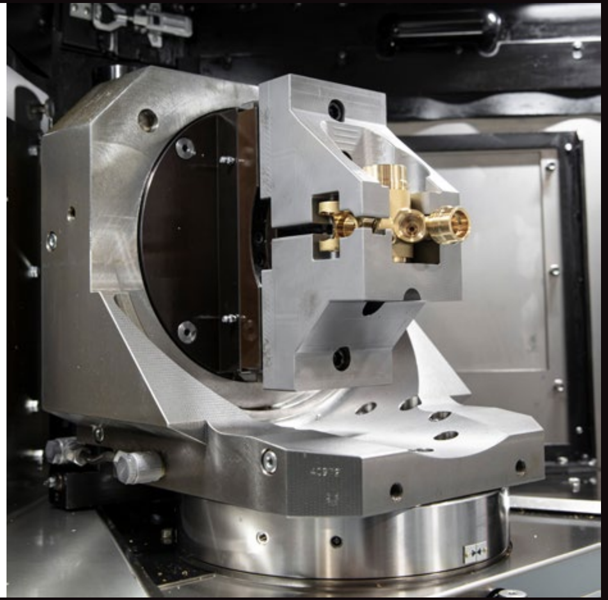


Project development with our Technical Department

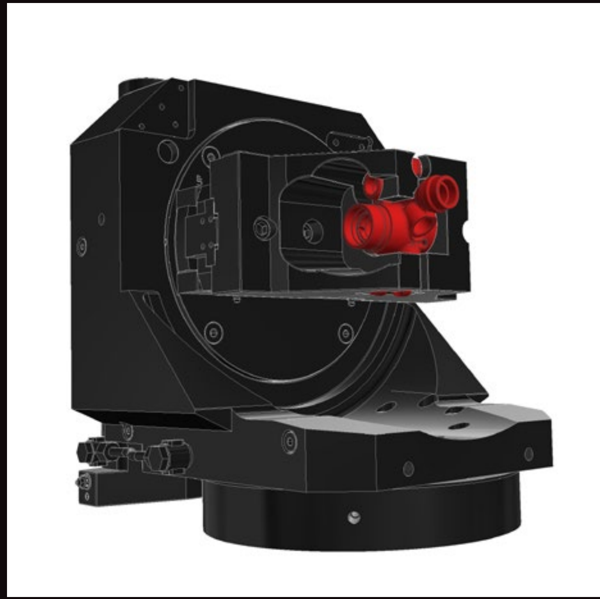
Sector: **MEDICAL**



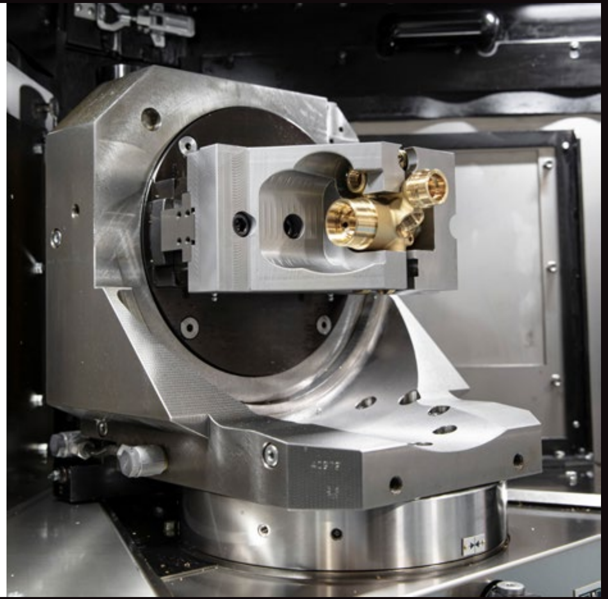
Material: **BRASS**

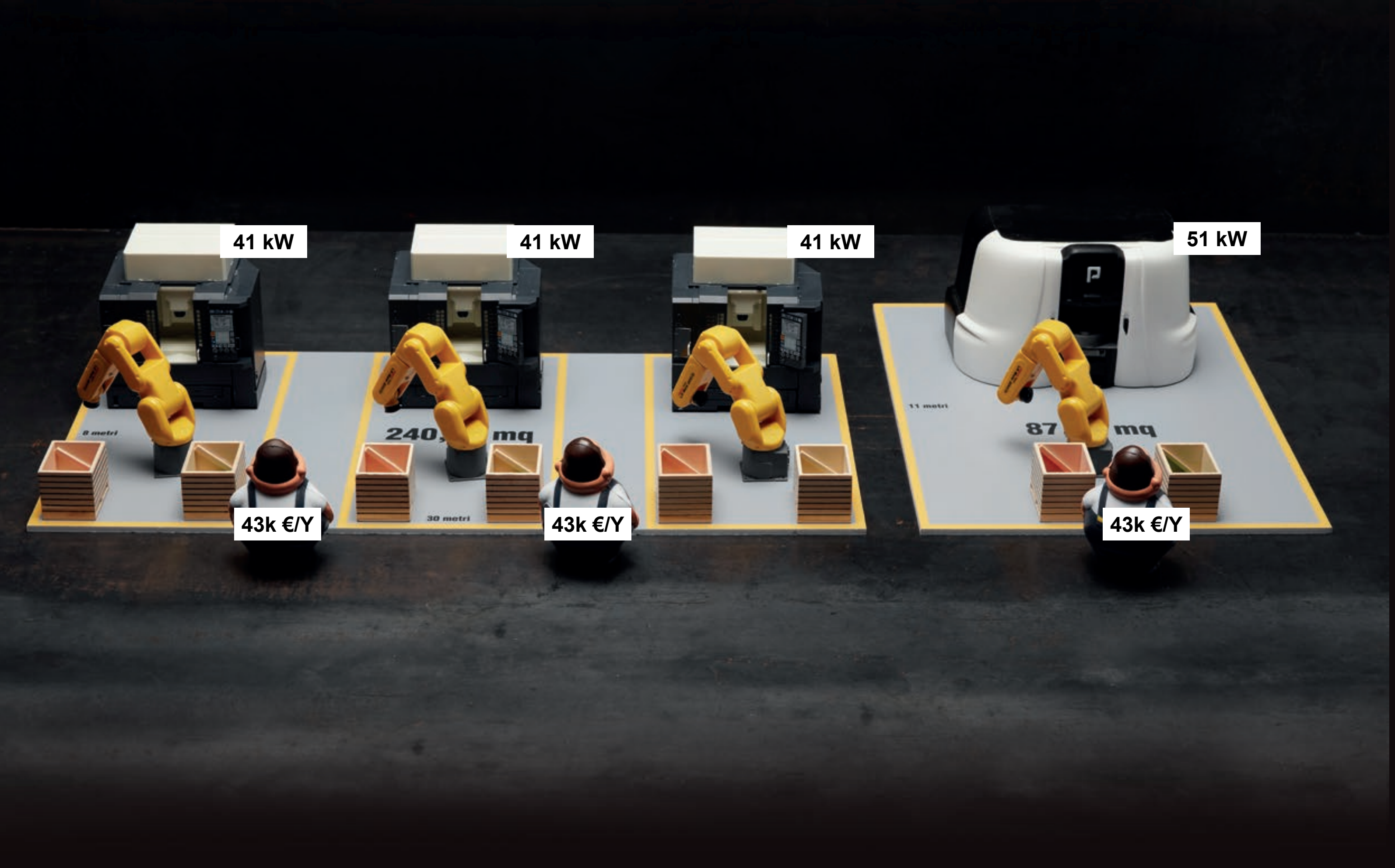


Sector: **MEDICAL**



Material: **BRASS**





PART COST CALCULATION

This type of cost calculation considers the cycle time and adds the input of other costs as labor, occupied area, fixture cost, tooling cost, energy cost, preventive maintenance.

Basically, all of the variables that go into determining the correct part cost.

This allows you to make specific assessments about the strategic business decisions to be made.

Being aware and knowing the cost in a scientific way means eliminating risks, and getting a higher control on the strategic choices; for example, in the choice of machines most suitable to reach the target.

Cost		One Machining Center	3 Machining Centers	PORTACENTER 3 Spindles
Machine	Per unit	€ _______	€ _______	from € _______
Loading / unloading automation	Robot	€ 1x_______	€ 3x_______	from € _______
Clamping fixtures	8-position cube, 2 pallets	€ _______	€ _______	€ _______
Tooling	10 tools	€ _______	€ _______	€ _______
Maintenance	Annual fee	€ _______	€ _______	€ 12.800
Energy	FEM @ 0,16 €/kWh	41	123	51
MdO @ 22,5€/h	Ratio operator/machine	0,67	0,67	1,00
Operator requirement	Head count	1	2	1
Room	[sqm/machine]	80	240	87

Costs		3 Machining Centers	PORTACENTER 3 Spindles	Porta Production Method
FEM @ 0,16 €/kWh		**€ 5.983**	**€ 2.521**	
MdO @ 22,5€/h	setup execution	**€ 14.400**	**€ 7.200**	
direct CPU		**€ 0,28**	**€ 0,14**	-52%
Cpk cost	125 parts per each clamp	**€ 1.699**	**€ 68**	-96%
Investment cost		**€ 1.152.125**	**€ 812.800**	-29%
Occupied space	[total sqm]	**240**	**87**	-64%

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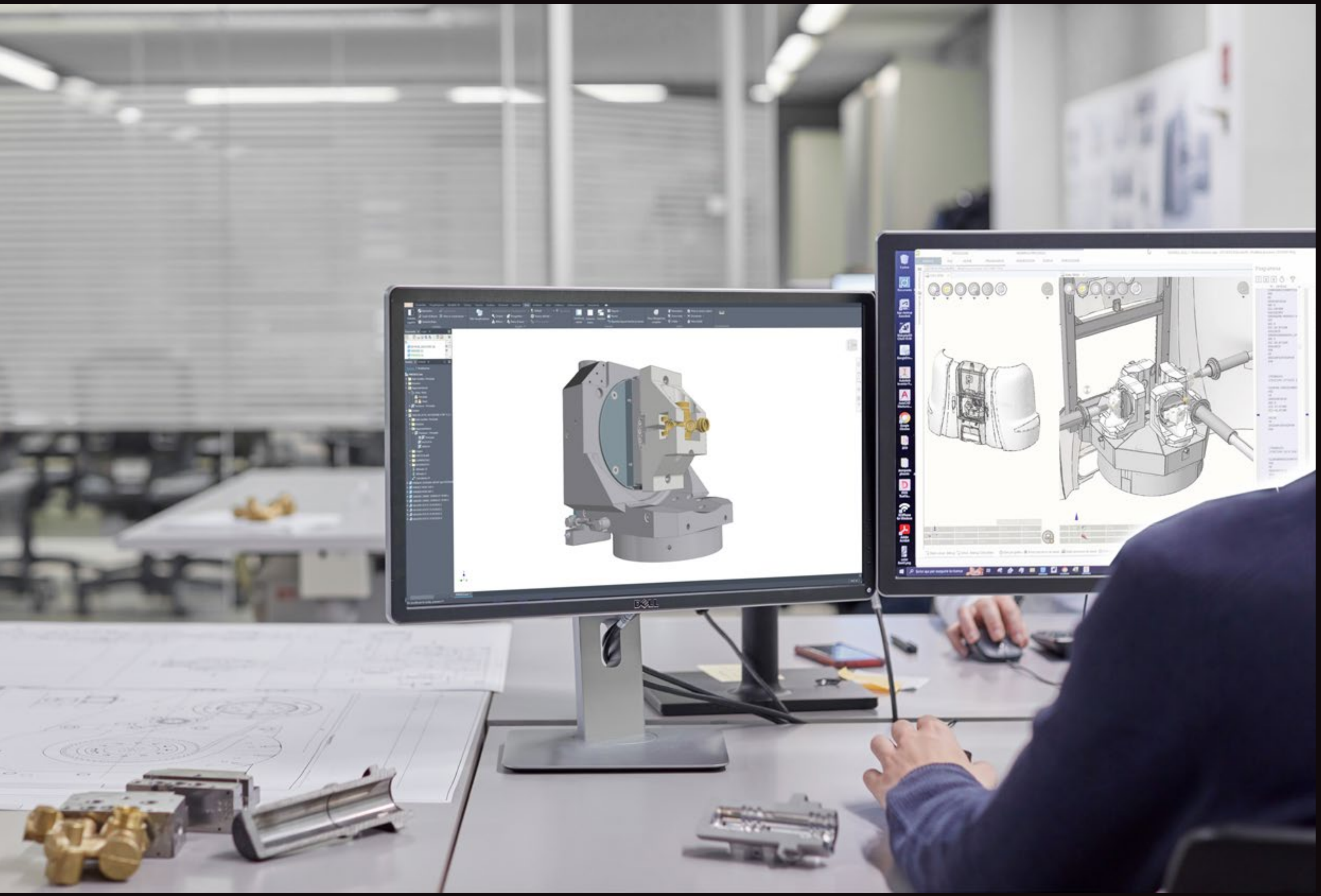
“ZERO RISK” TEST DRIVE

Test the machine BEFORE signing the contract.

Here are the 4 main advantages of the Test Drive:

1. To check the CYCLE TIME presented in the study.
2. To test FIXTURES.
3. Having the opportunity to make potential improvements to the process, before buying the machine.
4. To check the set-up time from one product to another.

All of this to reduce the risk of an incorrect investment to zero.



NEW PRODUCT DEVELOPMENT SERVICE

This service is reserved exclusively for customers who have the PORTACENTER.

It consists in entrusting us completely with the development of new products, with the advantage of leaving your PORTACENTER in production while we develop everything by using a duplicate machine installed in PORTA SOLUTIONS.

Here are the phases of the service:

> Product feasibility on the PORTACENTER.

> Drawing up of the best working process.

> Study of tooling.

> Part clamping study.

> Cycle time and relative balancing.

> Set-up of PORTACENTER Demo machine.

> Part set-up.

> Check of part tolerances by CMM or other appropriate methods.

> Part shipment to customer for approval.

> Sampling and relative CPK.

> Shipping to customer of the kit (fixtures, tools, part program).



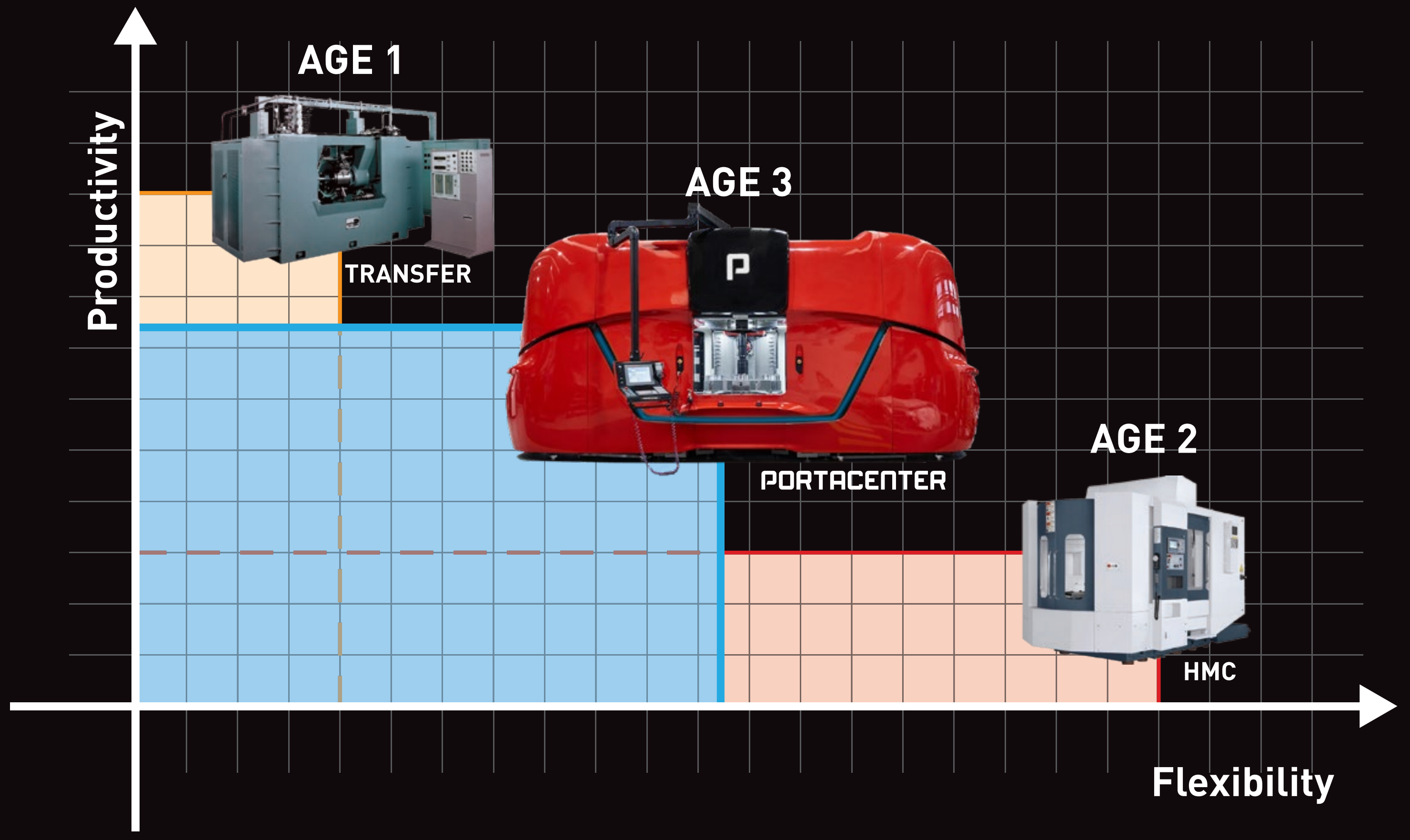
PORTA PRODUCTION SCHOOL

The school was created through a real Foundation, the Fondazione Porta, strongly supported by Maurizio Porta.

The purpose of this Foundation is to spread, through courses, the best competitive production techniques, thanks to the experience of the Technical Tutor who will train your operators to use your machines to optimize production.

A real training section with:

1. Lecture based classroom time to study the theory.
2. Fixtures and tools analysis and techniques for production.
3. A 3-spindle Machining Center, the PORTACENTER, at the complete disposal of the class for direct practice.
4. A Technical staff with over 30 years of experience that will guide you in the PORTA PRODUCTION METHOD. To learn, make mistakes, improve, and train in a protected environment; giving each student the tools to stand out when racing on the real world track and with an aim to win!



THE 3 AGES OF MANUFACTURING

> **AGE 1** - Mass production:
>
> **Problem:** how to produce big quantities at low cost per part
>
> **Solution:** high-production special transfer machines

> **AGE 2** - Customized production:
>
> **Problem:** how to produce small quantities
>
> **Solution:** standard machining centers

> **AGE 3** - Production on demand:
>
> **Problem:** how to produce only what you sell, at low cost per part
>
> **Solution:** PORTACENTER - 1 process, 3 times faster



To get your copy of the book
visit:

www.machiningcentersbook.com

WE DO NOT SELL MACHINE TOOLS

> We specialize in engineering machining process. We do not focus on selling you a machine tool like anybody else, since every single project is an engineered process, a turnkey solution.

> You buy from us the PERFORMANCE in terms of cycle time, fast changeover, energy consumption, floor space and all the other variables which determine your best cost per part.

> The PORTACENTER embraces both of them, by creating a new philosophy which is well described in the book written by Maurizio Porta.

www.porta-solutions.com
www.portaproduction.com

PORTASOLUTIONS
3 TIMES FASTER MACHINING CENTERS

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